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ABSTRACT

This study examined learning style differences in samples of the native Spanish-speaking population of the Texas-Mexico border region, focusing on possible culture- and gender-related variation. Subjects were 187 students at six universities in Texas, who were administered a Spanish translated version of the Gregorc Style Delineator. Results indicate that two learning styles, Abstract Sequential and Concrete Random, dominated with minor differences across samples. The former style was more common among males, and the latter more common among females. It is concluded that faculty at border universities should consider adjusting teaching techniques to fit the learning styles of this population. (Contains 8 references and 6 charts.) (MSE)

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A Test for Learning Style Differences for the U.S. Border Population

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This study examines learning-style differences by using a simplified version of a nationally validated test instrument. Results suggest either additional training or a modification of traditional styles of instruction may be necessary when cross-cultural differences or gender differences are high. Our survey of six border region universities indicates that the indigenous population is distinctly polarized. In the border context, the university students tested displayed learning styles that diverge from the national norms. Results further indicated a significant difference in learning style between genders.

INTRODUCTION

The task of learning presents unique challenges when the course of instruction is not presented in the primary language of the learner. In schools along the Mexican-U.S. border, U.S. citizens for whom English is not the primary language may have learning styles that differ from the standards established for the U.S. population. First- and second-generation English-speaking citizens may retain the language of their parents, who speak only some or no English. Since cross-cultural differences are high in border and near-border populations, learning styles that are divergent from the norm require special training for the faculty.

REVIEW OF LITERATURE

Validity testing for standardized instruments of measurement traditionally samples only subjects for whom English is the primary language. The U.S.-Mexican border region, stretching from the Gulf of Mexico to the Pacific, contains a multitude of university systems uniquely positioned to serve the indigenous population of the region. However, the primary language used for conducting the daily business in these regions is not English. Spanish is a necessary requirement for most transactions; whether involving a simple medical application, the purchase of groceries, or the arrangement of freight-forwarding with businesses from Mexico.

The border regions of the U.S. have evolved as a unique part of our cultural heritage, as have the university systems that serve this population. While instruction is almost entirely in English, the average student finds Spanish or a dialect of Spanish in day-to-day business use outside the university environment. This daily usage helps to reinforce Spanish as the primary language. In this region, the inability to communicate fluently in Spanish has an extremely limiting effect in both social and business settings.

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Faculty working these regions may require additional training to enable them to meet the needs of students. The traditional style of instruction, while acceptable for the general population, may not be adequate or may require modification when the job setting is the border region. Because of potential differences in learning styles between genders, the application of different techniques may also be necessary, depending on the gender composition of the class.

Professors are usually serious and conscientious about their teaching effectiveness and their ability to help students learn (Pratt and Gentry, 1994). However, the research activities of professors are often closely aligned to the theoretical structure of the academic discipline and seldom focus on studying how learning occurs and the principles that create student learning.

Learning is the processing of information. The modes or styles of information processing that individuals prefer are popularly phrased "learning styles" or "learning style preferences." Rita Dunn, director of the St. John's University Center for the Study of Learning and Teaching Styles in Jamaica, New York, defines learning style as the way individuals begin to concentrate, process, internalize, and remember new and difficult material (Filipczak, 1995). Individuals can learn via modes outside those they prefer; however, when given a choice, individuals ultimately refer back to their original preferences (Gregorc, 1977). How individual students process information has profound effects on how well and how much they learn. The optimum learning environment exists when the modes/styles by which the individual student processes information match those of the teacher.

According to Filipczak (1995) traditional education uses an auditory model with visual reinforcement and ignores both kinesthetic and tactual learners. Traditional teaching methods also appeal to analytic processors, though only a small percent of learners are analytic. Thus, creating an environment conducive to all learning styles is preferred. Moreover, the fundamental nature of the human capacity to learn must be understood and applied in the classroom.

The nationally validated Gregorc Style Delineator (Gregorc and Ward, 1977) was the model for this study. The four learning styles,: CS (Concrete Sequential), AS (Abstract Sequential), AR (Abstract Random), and CR (Concrete Random) are described as follows:

- The CS person prefers factual over abstract concepts and hands-on experience. This student breaks problems into logical steps.

- An AS person is not deterred if the material presentation is not well organized. This person sees the relevance, listens intently, is a good reader, and notices new vocabulary used during lecture.

- An AR person needs time to process information. This student is attuned to human behavior, looks for the big

picture, is subject to outside influences, and needs structure to assist the learning process.

- The CR person learns quickly and prefers trial and error. This student makes intuitive leaps and may find alternative solutions.

A study of the relationship between the Myers-Briggs Type Indicator and the Gregorc Style Delineator indicated that each learning style from the Gregorc Style Delineator corresponds to certain traits on the Myers-Briggs Type Indicator (Harasym, Leong, Juschka, Lucier, and Lorscheider, 1996). A preference for the Concrete Sequential learning style tended to have the traits of sensing and judging on the Myers-Briggs Type Indicator, while the Concrete Random learning style preference tended to have the traits of intuition and perception on the Myers-Briggs Type Indicator. The preference for the Abstract Sequential learning style tended to use the trait of thinking, while the Abstract Random learning style preference tended to have the trait of feeling (Harasym et al., 1996).

The educational community has long recognized the importance of determining learning styles and adapting teaching techniques to meet students' preferences. Unfortunately, many educators fail to incorporate this theory into practice. All too often business professors use traditional teaching methods, such as lectures and filling the board with notes to be copied by hand. These approaches fail to consider that more effective learning will take place if teaching styles are adapted to the learning preferences of students.

Because both the student population and the business world are becoming more multicultural, the need to determine the learning-style preferences for the population whose primary language is not English has increased dramatically. Teaching professionals must address diversity in order to make classes equitable to all types of students. Educators must examine their students, their methodology, and themselves. Only then can the learning style literature be examined for ways to optimize the learning environment for all students. If educators simply teach in the manner in which they learn, then emphasis is placed only on their individual learning style or preference. Identifying matches and mismatches of the various learning styles will enable us to better assess our methods and styles of teaching (Helgesen and Gentry, 1995).

Several studies have investigated the relation of culture to learning-style preferences. One such study by Helgesen and Gentry (1995) examined race differences for the average U.S. college. The Helgesen and Gentry sample focused on Caucasian and African-American comparisons and tests were administered in English. A similar study compared learning style preferences of Korean, Mexican, Armenian-American, and Anglo students in the Los Angeles area to show the cultural diversity of learning styles (Park, 1997). While all groups showed preference for auditory, kinesthetic, and tactile learning styles, the Koreans, Armenians, and

Mexicans differed from the Anglos in their responses to visual and group learning styles.

Our study focuses on the Hispanic-American whose primary language is Spanish. This study is unique in that it utilizes an evaluation instrument constructed in the primary language of the learner, thus reducing the potential of inaccurate results deriving from translation errors. Additionally, this study focuses on cross-cultural and gender differences found in border student populations. Suggestions are offered for either additional training or modification of traditional styles of instruction when significant cross-cultural and/or gender differences exist.

DATA AND METHODOLOGY

The assessment instrument used as a pattern for our study is the nationally validated Gregorc Style Delineator. This assessment involves the ranking of four words per group with a total of twelve groups. A copywrited scoring technique results in a visual profile of the subject across four learning styles,: CS (Concrete Sequential), AS (Abstract Sequential), AR (Abstract Random), and CR (Concrete Random)

Permission was obtained to use a Spanish translated version of the Gregorc Style Delineator. The instrument was translated from English into Spanish. The Spanish words used in the converted instrument were selected based on the currently accepted English definition. All ties were decided upon by a committee of four faculty members who are fluent in both English and Spanish. Additional demographic questions were also included in the test instrument to identify students by gender and to determine if Spanish was their primary language.

The Spanish version of the learning style delineator was administered at multiple border locations. Of the 342 forms returned, 187 were usable. The completed instruments were rejected from the study if English was the primary language, if the student was not fluent in Spanish, or if no indication of fluency was given. Completed forms that did not indicate gender were treated separately. These forms were included in the general sample, but excluded from the gender-specific samples.

Selection of universities to include in the study were based on two factors: (1) availability and (2) a predominately Hispanic student population. Universities in Texas along or near the Texas-Mexican border were included in the sample (see Table 1). The largest student bodies sampled were the University of Texas-Brownsville with 8,800 students (more than 90% Hispanic) and the University of Texas-Pan American with over 12,000 students (approximately 82% Hispanic). Smaller universities participating in the study were Sul Ross State University and Rio Grande College with a combined total of approximately 1,000 students and a 65% Hispanic population. Also sampled was Texas A&M International University with an enrollment of approximately 2,500 students and 85% Hispanic (see Table 1). The overwhelming majority of the university populations studied was Hispanic-American.

Table 1
University Enrollments and Hispanic Population

Universities Included in the Study [1,2]	Enrollment	Percent Hispanic Population
University of Texas-Brownsville	8,800 +	90 + percent
University of Texas-Pan American	12,000 +	82 + percent
Laredo State University	2,500 +	85 percent
Rio Grande College	1,000 +	65 + percent
Sul Ross	1,000 +	65 + percent

[1] Note: California Universities were unable to participate at this time due to controversy surrounding pending legislative issues.

[2] Special thanks to Dr. Betsy Bose, Dean, U.T. Brownsville, Dr. Bud Ellard, U.T. Pan American, Dr. Steven Ash, Sul Ross State University , and Dr. Malco Patterson, Texas A&M Intl. University, for their assistance in sampling.

Data analysis involved averaging the results for the three subsamples: Overall, Male, and Female. The Gregorc Style Delineator provided a visual representation of our findings as compared to national norms. The standard deviations of these averages were used to determine the sample characteristics for comparative purposes.

RESULTS

Each university was examined separately and as part of the overall sample. None of the universities sampled were inconsistent with one another, meaning no single university skewed the overall results.

Each of the samples received from participating schools is included in Charts I through IV. The results indicate a surprising similarity in two of the Learning Styles. Abstract Sequential and Concrete Random styles appear to dominate with minor differences between the different samples. In Chart V male respondents and female respondents are compared separately. The Abstract Sequential attribute is stronger for males, while the Concrete Random attribute is stronger for females. Chart VI includes all subjects tested, including those not identified by gender.

CONCLUSION

Whereas the general U.S. population studied in Helgesen and Gentry (1995) were classified as primarily CS (Concrete Sequential), our results classified the Hispanic population as predominately CR (Concrete Random). Females in the gen-

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eral population tested AR (Abstract Random) (see Helgesen and Gentry, 1995); our population of Hispanic females was predominately the AS (Abstract Sequential) learning style. These results are unique and have specific implications for the learning process at border institutions.

Significant differences in learning styles between the average population of border and nonborder universities were identified. The differences were both cross-cultural and gender specific. Our study indicates that professors at border universities should consider adjusting teaching techniques to fit the learning style of this population. Further research is suggested to reconfirm these identified differences.

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CHART I

Overall results for UT - Brownsville sample
(N=38)

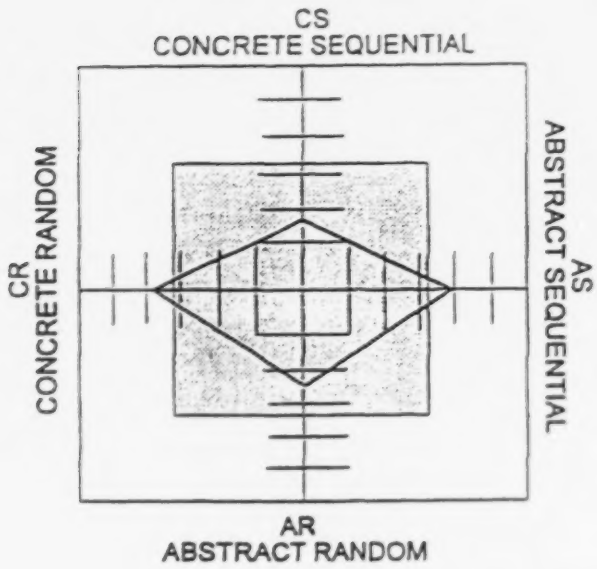

CHART II

Overall results for UT - Pan American sample
(N=42)

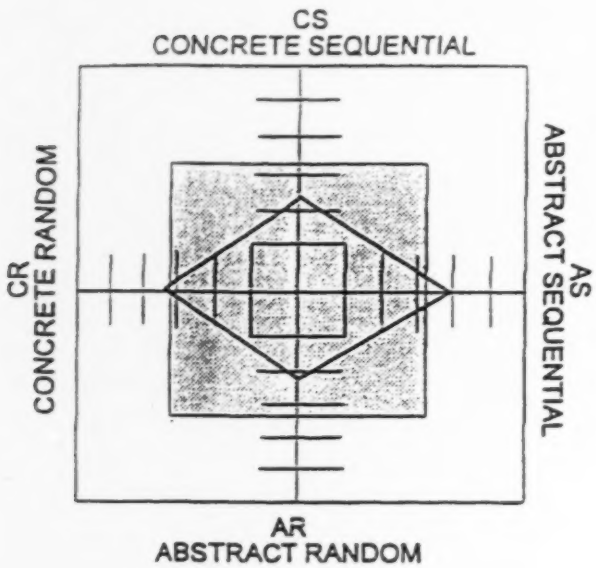

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CHART III

Overall results for Laredo sample
(N=44)

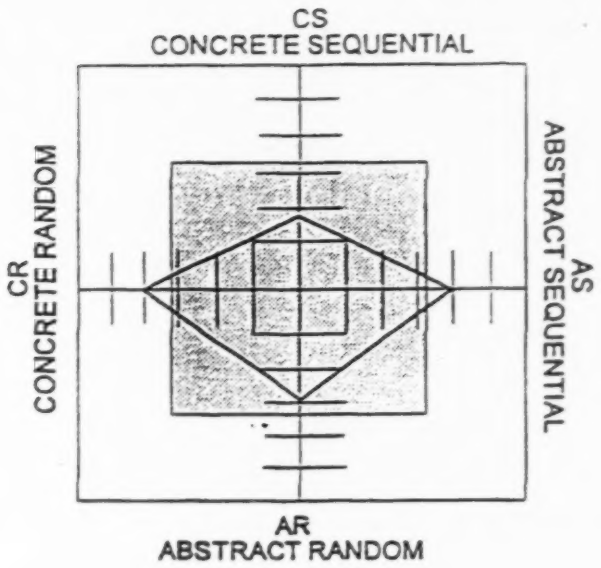


CHART IV

Overall results for the SulRossUniversity/Rio Grande College sample
(N=25)

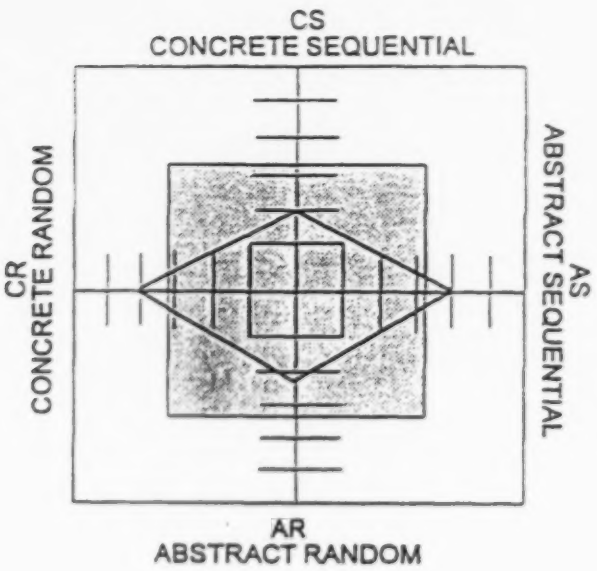
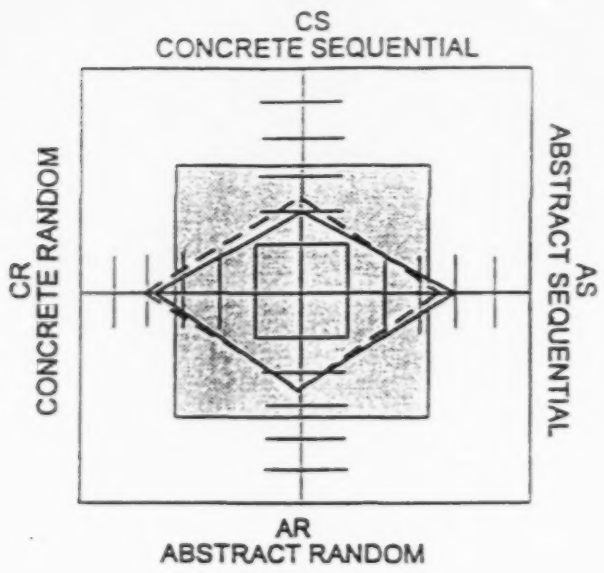


CHART V

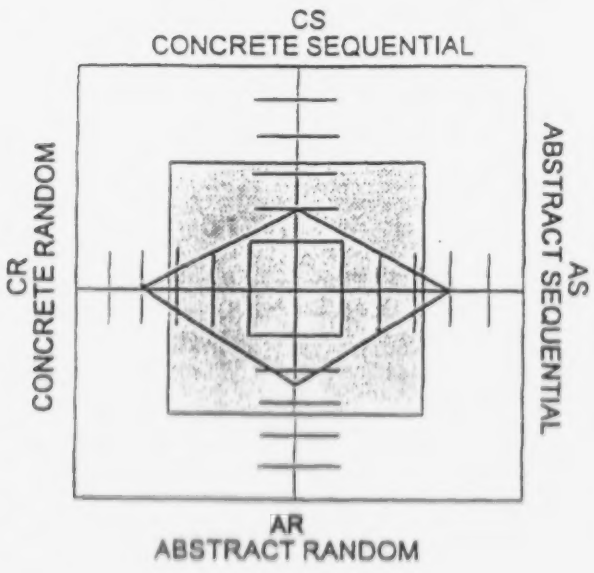
Overall results for the four universities sample
Male vs. Female (N=61 vs.88)



Key:
Male = ——
Female = – – –

CHART VI

Overall results for the four universities sample (N=187) includes surveys not identifying gender



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